Condensed Survey Results for Valleys and Hills (Region 4)

I. Threats to habitats in Valleys and Hills (Region 4)

Criteria for inclusion: The following **categories** of threats and **specific threats** were identified as "significant" or "moderate." The percentages listed below are the combined proportion of respondents indicating these threats as "significant" or "moderate," excluding those who answered "I don't know." N indicates the number of individuals that selected this option.

Agriculture and aquaculture: *Threats from farming and ranching as a result of agricultural expansion and intensification, including silviculture, mariculture, and aquaculture*	94.4%	84	
Conversion of habitat to annual crops	93.8%	76	Increase
Annual and perennial nontimber crops	86.6%	71	Increase
Livestock farming and ranching	49.4%	39	Remain the same
Wood and pulp plantations	17.9%	12	Remain the same
Aquaculture	8.9%	5	Remain the same

Invasives and other problematic species and genes: *Threats from non-native and native plants, animals, pathogens/microbes, or genetic materials that have or are predicted to have harmful effects on biodiversity following their introduction, spread, and/or increase in abundance*	75.6%	68	
Invasive/alien species	100.0%	67	Increase
Problematic native species (e.g. overabundant native deer or algae)	59.1%	39	Remain the same
Plant diseases	44.6%	25	Remain the same
Introduced genetic material (such as crop, seed stock, biocontrol, stocked/released species, etc.)	42.0%	21	Increase

Residential and commercial development: *Threats from human settlements or other nonagricultural land uses with a substantial footprint*	70.0%	63	
Housing and urban areas	0.967742	60	Increase
Commercial and industrial areas	0.881356	52	Increase
Tourism and recreation areas (e.g., sites with a substantial footprint – golf courses, campgrounds, etc.)	0.4	24	Remain the same

Energy production and mining: *Threats from production of nonbiological resources*	68.9%	62	
Mining and quarrying	93.2%	55	Remain the same
Fossil fuel energy production	80.0%	44	Remain the same
Oil and gas drilling	63.2%	36	Remain the same
Shale gas development (e.g., fracking)	60.4%	29	Remain the same
Renewable energy production	18.4%	9	Increase

Human intrusion and disturbance: *Threats from human activities that alter, destroy, and disturb habitats and species associated with nonconsumptive uses of biological resources.*	63.1%	53	
Recreation activities (e.g., ATVs, trail use, horseback riding, high-speed boating, canoeing)	45.1%	23	Increase

Pollution: *Threats from introduction of exotic and/or excess materials or energy from point and nonpoint sources*	61.4%	54	
Agriculture, residential, and forestry effluents	88.0%	44	Increase
Point source pollution from commercial/industrial sources	72.5%	37	Remain the same

Runoff from roads/service corridors	69.8%	37	Increase
Household sewage and urban water waste	67.3%	35	Remain the same
Air pollution (e.g., smoke, mercury emissions)	64.0%	32	Remain the same
Chemical spills	54.9%	28	Remain the same
Excess energy (e.g., noise/light pollution, warm water discharge, etc.)	38.8%	19	Remain the same
Garbage and solid waste	38.0%	19	Remain the same
Natural systems modifications: *Threats from human activities that alter, destroy, and disturb habitats and species associated with nonconsumptive uses of biological resources*	59.8%	52	
Conversion of natural habitats to other land uses	92.0%	46	Increase
Dams and water management/use	39.1%	18	Increase
Fire and fire suppression	32.0%	16	Remain the same
Over-mowing of natural areas	31.3%	15	Remain the same
Log jam removal	20.5%	9	Remain the same
Transportation and service corridors: *Threats from long, narrow transport corridors and the vehicles that use them, including associated wildlife mortality*	41.9%	36	
Roads and railroads	79.4%	27	Increase
Utility and service lines	45.7%	16	Increase
Shipping lanes	23.3%	7	Remain the same
Flight paths	3.4%	1	Remain the same
Climate change and severe weather: *Long-term climactic changes that may be linked to global warming and other severe climactic or weather events outside the natural range of variation that could wipe out vulnerable species or habitat.*	35.0%	28	
Changing frequency, duration, and intensity of floods	96.3%	26	Increase
Changing frequency, duration, and intensity of drought	85.2%	23	Increase
Shifting and alteration of habitats due to climate change	77.8%	21	Increase
Temperature extremes	73.1%	19	Increase
Shifting seasons/phenology	70.8%	17	Increase
Other stressors: *Additional threats and stressors directly affecting habitats, such as diseases and genetic diversity issues*	30.6%	19	
Diseases	85.7%	12	Increase
Low genetic diversity (due to reduced population size, species inbreeding, etc.)	82.4%	14	Increase
Biological resource use: *Threats from consumptive use of "wild" biological resources including deliberate and unintentional harvesting effects; also persecution or control of specific species*	20.9%	18	
Forestry practices (e.g., silvicultural methods leading to the lack of early successional habitat)	58.8%	10	Remain the same

I. Conservation actions for habitats in Valleys and Hills (Region 4)

Criteria for inclusion: The following **categories** of actions and **specific actions** were identified as "very important" or "moderately important." The percentages listed below are the combined proportion of respondents indicating these actions as "very important" or "moderately important," excluding those who answered "I don't know." N indicates the number of individuals that selected this option.

	Land/Water/Species Management: *Actions directed at conserving or restoring sites, habitats, and the wider environment as well as actions directed at managing or restoring species, focused on the species of concern itself.*	91.7%	77
1.	Manage urban woodlots	100.0%	4
2.	Restore and integrate diversity of habitats into developed landscapes	100.0%	4
3.	Restore habitats and natural systems in HABITAT	94.5%	69
4.	*Restore habitats and natural systems in aquatic systems*	*90.0%*	*18*
5.	*Restore habitats and natural systems in barren lands*	*0.0%*	*0*
6.	*Restore habitats and natural systems in forests*	*91.7%*	*11*
7.	*Restore habitats and natural systems in grasslands*	*100.0%*	*20*
8.	*Restore habitats and natural systems in wetlands*	*95.2%*	*20*
9.	*Restore habitats and natural systems in subterranean systems*	*N/A*	*N/A*
10.	Reduce losses of fish and wildlife habitats (due to agriculture, urban sprawl, commercial development, etc.)	93.5%	87
11.	Control invasive species in HABITAT	92.6%	87
12.	*Control invasive species in agricultural lands*	*88.2%*	*15*
13.	*Control invasive species in aquatic systems (e.g., Asian carp, zebra mussels, invasive aquatic plants)*	*85.0%*	*17*
14.	*Control invasive species in barren lands*	*0.0%*	*0*
15.	*Control invasive species in developed lands*	*100.0%*	*4*
16.	*Control invasive species in forests*	*100.0%*	*12*
17.	*Control invasive species in grasslands*	*95.0%*	*19*
18.	*Control invasive species in wetlands*	*95.2%*	*20*
19.	*Control invasive species in subterranean systems*	*N/A*	*N/A*
20.	Reestablish natural disturbance regimes in HABITAT	92.3%	48
21.	*Reestablish natural disturbance regimes in barren lands*	*#DIV/0!*	*0*
22.	*Reestablish natural disturbance regimes in forests*	*83.3%*	*10*
23.	*Reestablish natural disturbance regimes in grasslands*	*100.0%*	*20*
24.	*Reestablish natural disturbance regimes in wetlands*	*90.0%*	*18*
25.	*Reestablish natural disturbance regimes in subterranean systems*	*N/A*	*N/A*
26.	Promote diversity of wetland types and successional stages	90.5%	19
27.	Promote diversity of grassland types and successional stages	90.0%	18
28.	Reduce stream bank erosion	90.0%	18
29.	Develop and promote farming technologies and practices that have conservation benefits (e.g., cover crops, no till)	89.1%	82
30.	Link existing habitat blocks through corridor enhancement in HABITAT	88.3%	83
31.	*Link existing habitat blocks through corridor enhancement in agricultural lands*	*94.1%*	*16*
32.	*Link existing habitat blocks through corridor enhancement in aquatic systems*	*80.0%*	*16*
33.	*Link existing habitat blocks through corridor enhancement in barren lands*	*0.0%*	*0*
34.	*Link existing habitat blocks through corridor enhancement in developed lands*	*100.0%*	*4*
35.	*Link existing habitat blocks through corridor enhancement in forests*	*91.7%*	*11*
36.	*Link existing habitat blocks through corridor enhancement in grasslands*	*85.0%*	*17*
37.	*Link existing habitat blocks through corridor enhancement in wetlands*	*90.5%*	*19*
38.	*Enhance corridors in subterranean systems*	*N/A*	*N/A*
39.	Restore and integrate diversity of habitats into crop-production dominated landscapes	88.2%	15
40.	Protect natural water regimes (e.g., withdraws, warm-water discharge)	87.8%	36
41.	Increase acres of riparian buffers	87.0%	80
42.	Reduce nutrient and toxin loads (e.g., heavy metals, pharmaceuticals, fertilizers,	82.4%	75

	insecticides)		
43.	Improve drainage management	82.2%	74
44.	Promote diversity of forest types and successional stages	75.0%	9
45.	Decrease number of combined sewer overflow events	74.4%	29
46.	Improve integrated pest management	70.6%	12
47.	Reduce stream head cutting	64.7%	11
48.	Increase acres enrolled in the Classified Forest and Wildlands Program	64.1%	59
49.	Control problematic native species in HABITAT	61.7%	58
50.	*Control problematic species (e.g., deer, raccoon, geese, domestic cat, feral hog) in agricultural lands*	*64.7%*	*11*
51.	*Control problematic native species in aquatic systems*	*50.0%*	*10*
52.	*Control problematic species (e.g., deer, raccoon, skunk, coyote, domestic cat, feral hog) in barren lands*	*0.0%*	*0*
53.	*Control problematic species (e.g., deer, raccoon, geese, domestic cat, feral hog, exotic/aggressive vegetation) in developed lands*	*75.0%*	*3*
54.	*Control problematic species (e.g., deer, raccoon, domestic cat, feral hog) in forests*	*75.0%*	*9*
55.	*Control problematic species (e.g., raccoon, skunk, coyote, domestic cat) in grasslands*	*45.0%*	*9*
56.	*Control problematic species (e.g., deer, raccoon, domestic cat, feral hog, exotic/aggressive vegetation) in wetlands*	*76.2%*	*16*
57.	*Control problematic native species in subterranean systems*	*N/A*	*N/A*
58.	Protect and enhance undeveloped shorelines	61.5%	24
59.	Species reintroduction. Please specify:	56.0%	14
60.	Dam removal	47.4%	18
61.	Decrease E. coli counts	47.1%	16
62.	Manage biofuel grasslands	47.1%	16
63.	Reduce recreational overuse of HABITAT	46.4%	32
64.	*Reduce recreational overuse of aquatic systems*	*47.4%*	*9*
65.	*Reduce recreational overuse of forests*	*50.0%*	*6*
66.	*Reduce recreational overuse of grasslands*	*52.6%*	*10*
67.	*Reduce recreational overuse of wetlands*	*36.8%*	*7*
68.	*Reduce recreational overuse of subterranean systems*	*N/A*	*N/A*
69.	Ex situ conservation (protection of a species outside of its natural habitat). Please specify:	29.8%	17
70.	Remove log jams	25.0%	5
71.	Mine reclamation	14.0%	8
72.	Protect adjacent buffer zones	0.0%	0
	Land/water protection: *Actions to identify, establish, or expand parks and other legally protected areas, and to protect resource rights*	87.2%	75
73.	Preserve currently existing corridors	97.3%	73
74.	Acquire conservation easements to protect important wildlife habitats	96.0%	72
75.	Reduce conversion to cropland	94.6%	70
76.	Acquire currently unprotected HABITAT	93.5%	58
77.	*Acquire currently unprotected aquatic systems (manage and/or educate for easement habitat values)*	*100.0%*	*15*
78.	*Acquire currently unprotected barren lands*	*50.0%*	*1*
79.	*Acquire currently unprotected forests*	*86.7%*	*13*
80.	*Acquire currently unprotected grasslands*	*93.3%*	*14*
81.	*Acquire currently unprotected wetlands*	*100.0%*	*15*
82.	*Acquire currently unprotected subterranean habitats*	*N/A*	*N/A*
83.	Build/strengthen CRP partnerships	91.4%	64
	Education and awareness: *Actions directed at people to improve understanding and skills, and influence behavior.*	77.3%	68
84.	Educational programs specifically for K-12	92.6%	63
85.	Training programs for stakeholders	91.2%	62
86.	Educational programs in general	91.0%	61

87.	Improvement of signage and other communication materials in conservation areas	53.7%	36
	Livelihood, economic, and other incentives: *Actions to use economic and other incentives to influence behavior*	72.3%	60
88.	Promote conservation payment programs (e.g., payment for ecosystem services, conservation easements)	91.7%	55
89.	Manage recreational opportunities to be compatible with fish and wildlife habitats	75.0%	45
90.	Promote market forces (e.g., creation of a nitrogen trading market, promotion of alternative agricultural markets) as a tool for conservation	71.7%	38
91.	Promote nonmonetary values of natural systems within the state	71.2%	42
92.	Support substitution of alternatives for environmentally harmful products and processes	62.1%	36
93.	Link natural resources to livelihoods through nature tourism	54.2%	32
	Law and policy: *Actions to develop, change, influence, and help implement formal legislation, regulations, and voluntary standards.*	68.3%	56
94.	Improve compliance with and enforcement of current policies	84.9%	45
95.	Reduce urban sprawl through planning and zoning	72.2%	39
96.	Increase regulations on invasive species	70.9%	39
97.	Set private sector standards and codes	59.6%	28
98.	Change current laws, policies, and regulations. Please specify:	52.8%	19
	External capacity building: *Actions to build the infrastructure to do better conservation*	66.7%	54
99.	Develop alliances and partnerships (e.g., between producers, landowners, and conservation professionals)	100.0%	54
100.	Promote use of research and science in conservation decision-making processes	96.3%	52
101.	Strengthen conservation financing	90.6%	48
102.	Increase state's capacity for research and monitoring of conservation actions	88.9%	48
103.	Promote green infrastructure	79.2%	42
104.	Develop institutions and civil society	61.0%	25

II. Participation in conservation actions for habitats in Valleys and Hills (Region 4)

Criteria for inclusion: Respondents were asked if their agency/organization had acted or plans to take action in a general category of conservation actions within this region. "I don't know" responses to this question were excluded for this analysis. Responses were aggregated across all habitat types.

Have you taken (since 2005) or do you currently plan to take conservation actions in this category for fish and wildlife habitats within HABITAT in Valleys and Hills (Region 4)?

	Yes		No		Total
	%	N	%	N	Responses
Land/water protection	69.5%	41	30.5%	18	59
Land/water/species management	80.4%	45	19.6%	11	56
Education and awareness	73.8%	45	26.2%	16	61
Law and policy	50.0%	25	50.0%	25	50
Livelihood, economic, and other incentives	20.4%	10	79.6%	39	49
External capacity building	34.0%	16	66.0%	31	47